ABSTRACT

A splicing stage for fusion joining two optical fibers comprises an electric arc welding system, a clamping and fiber position adjustment system, and an optional imaging optical system. The stage is preferably incorporated in a compact, low profile, modular fusion splicing system that employs a local injection and detection system to optimally align and position the fibers before fusion. The system is rugged, portable, and capable of operating in an adverse environment. Compact and low in profile, the splicing stage and system are operable with minimal clearance to adjacent equipment and structures and with only a minimal amount of free fiber slack available. Simplicity of design and operation enable accurate alignment and reproducible formation of low transmission loss spliced joints.